

No: 03/123/TTQT-2023-EN

VILAS 406; VIMCERTS 055

ENVIRONMENTAL MONITORING RESULTS

Sampling Site : Ash pond 2 - Mong Duong 2 BOT Coal Fired Power Plant
Address : Cong Hoa commune – Cam Pha city – Quang Ninh province
Sampling Date : 11/12/2023
Type of Samples : Wastewater
Number of Samples : 02 samples

No.	Parameters	Unit	Analytical methods	Results		QCĐP 3:2020/QN	
				AP-W1	AP-W2	C _(Column B)	C _{max}
1.	Temperature	°C	SMEWW 2550B:2017	24.2	23.9	40	40
2.	pH	-	TCVN 6492:2011	7.8	7.9	5.5 – 9.0	5.5 - 9.0
3.	Color (pH=7)	Pt/Co	TCVN 6185:2015	<5	<5	150	150
4.	TSS	mg/L	TCVN 6625:2000	<2	<2	100	90
5.	COD	mg/L	SMEWW 5220C:2017	18	16	150	135
6.	BOD ₅	mg/L	TCVN 6001-1:2008	5	4	50	45
7.	Arsenic (As)	mg/L	EPA method 200.8	0.004	0.004	0.1	0.09
8.	Mercury(Hg)	mg/L	EPA method 200.8	<0.001	<0.001	0.01	0.009
9.	Lead (Pb)	mg/L	EPA method 200.8	<0.0005	<0.0005	0.5	0.45
10.	Cadmium (Cd)	mg/L	EPA method 200.8	<0.0005	<0.0005	0.1	0.09
11.	Chromium III	mg/L	EPA Method 200.8 & TCVN 6658:2000	0.021	0.018	1	0.9
12.	Chromium VI	mg/L	TCVN 6658:2000	<0.006	<0.006	0.1	0.09
13.	Copper (Cu)	mg/L	EPA method 200.8	0.0041	0.0034	2	1.8
14.	Zinc (Zn)	mg/L	EPA method 200.8	0.0079	0.0072	3	2.7
15.	Nikel (Ni)	mg/L	EPA method 200.8	0.0208	0.0158	0.5	0.45
16.	Manganese (Mn)	mg/L	EPA method 200.8	0.072	0.055	1	0.9
17.	Iron (Fe)	mg/L	EPA method 200.8	0.13	0.14	5	4.5
18.	Total mineral oil & grease	mg/L	SMEWW5520B&F:2017	<0.3	<0.3	10	9
19.	Residue Chlorine	mg/L	TCVN 6225-3:2011	<0.1	<0.1	2	1.8
20.	Sulfide (as H ₂ S)	mg/L	TCVN 6637:2000	<0.03	<0.03	0.5	0.45
21.	Total N	mg/L	TCVN 6638:2000	3.74	3.29	40	36
22.	Total P	mg/L	TCVN 6202:2008	0.03	0.03	6	5.4
23.	Ammonium (NH ₄ ⁺)	mg/L	SMEWW 4500 NH ₃ .F:2017	0.10	0.12	10	9
24.	Fluoride (F ⁻)	mg/L	SMEWW 4500-F ⁻ .B&D:2017	8.80	8.75	10	9
25.	Total Cyanide (CN ⁻)	mg/L	SMEWW 4500 CN ⁻ .C&E:2017	<0.002	<0.002	0.1	0.09
26.	Total Phenol	mg/L	SMEWW 5530 B&C:2017	0.005	0.003	0.5	0.45

No.	Parameters	Unit	Analytical methods	Results		QCĐP 3:2020/QN	
				AP-W1	AP-W2	C _(Column B)	C _{max}
27.	Coliform	MPN/ 100mL	TCVN 6187-2:1996	750	640	5,000	5,000

Note

- The result is valid only for samples at the monitoring time.
- The samples will be destroyed after 5 days from the date of issue of environmental monitoring results unless otherwise agreed with the customer.
- **QCĐP 3:2020/QN** - Local technical regulation on industrial wastewater in Quang Ninh province; Column B specifies the C value of pollution parameters in industrial wastewater when discharged into water sources not used for domestic water supply purposes, C_{max} is the maximum allowable value of pollution parameters in industrial wastewater when discharging into the receiving water source:

$$C_{max} = C \times K_q \times K_f \times K_{QN} = C \times 1.0 \times 0.9 \times 1.0 = 0.9 \times C$$

In which:

- + C: Values of pollution parameters in industrial wastewater specified in QCĐP 3:2020/QN
- + K_q: Coefficient of wastewater receiving source corresponding to the flow volume of rivers, streams, canals and ditches, or corresponding to the volume of lakes, ponds, lagoons; the use purpose of the coastal sea area K_q = 1.0;
- + K_f: Wastewater flow coefficient corresponding to the total wastewater flow of industrial facilities when discharging into the receiving water source K_f = 0.9;
- + K_{QN}: Coefficient of additional application specific to QCĐP 03: 2020/QN for waste sources when discharged into rivers, streams, creeks, canals, lakes and reservoirs with different water use purposes and in different areas. different regions, K_{QN} = 1.0

- Sampling position:

AP-W1: Wastewater from neutralization tank

Coordinates

21°06'40.9"N 107°21'19.8"E

AP-W2: Output of wastewater treatment system – Ash pond 2

21°06'42.5"N 107°21'12.9"E

Ha Noi, December 20th, 2023

School of Environmental Science and Technology

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ENVIRONMENTAL MONITORING RESULTS

Sampling area : Ash pond 2 - Mong Duong 2 BOT Coal Fired Power Plant
Address : Cong Hoa commune – Cam Pha city – Quang Ninh province
Sampling date : 11/12/2023
Type of samples : Surface water in receiving resource
Number of samples : 02 samples

No.	Parameters	Unit	Analytical methods	Results		QCVN 10-MT: 2015/BTNMT
				SW1	SW2	
1.	Temperature	°C	SMEWW 2550B:2017	26.4	26.3	-
2.	pH	-	TCVN 6492:2011	7.5	7.6	6.5 – 8.5
3.	DO	mg/L	TCVN 7325:2016	7.8	8.2	-
4.	TSS	mg/L	TCVN 6625:2000	17	15	-
5.	Nitrite (NO ₂ ⁻)	mg/L	SMEWW 4500 NO ₂ ⁻ .B:2017	0.06	0.08	-
6.	Fluoride (F ⁻)	mg/L	SMEWW 4500-F.B&D:2017	1.38	1.44	1.5
7.	COD	mg/L	SMEWW 5220C:2017	67	80	-
8.	BOD ₅	mg/L	TCVN 6001-1:2008	24	32	-
9.	Ammonium (NH ₄ ⁺)	mg/L	SMEWW 4500 NH ₃ .F:2017	0.13	0.15	0.5
10.	Nitrat (NO ₃ ⁻ -N)	mg/L	SMEWW 4500 NO ₃ ⁻ .E:2017	0.28	0.42	-
11.	Chloride (Cl ⁻)	mg/L	TCVN 6194-1996	13,858	14,093	-
12.	PO ₄ ³⁻	mg/L	TCVN 6202:2008	0.09	0.07	0.5
13.	Total Cyanide	mg/L	SMEWW 4500 CN.C&E:2017	<0.002	<0.002	0.01
14.	Total oil and grease	mg/L	SMEWW 5520B&F:2017	<0.3	<0.3	1
15.	Coliform	MPN/ 100mL	TCVN 6187-2:1996	810	850	1.000
16.	Arsenic (As)	mg/L	EPA method 200.8	0.0038	0.0042	0.05
17.	Cadmium (Cd)	mg/L	EPA method 200.8	<0.0005	<0.0005	0.01
18.	Lead (Pb)	mg/L	EPA method 200.8	<0.0005	<0.0005	0.1
19.	Mercury (Hg)	mg/L	EPA method 200.8	<0.0005	<0.0005	0.005
20.	Iron (Fe)	mg/L	EPA method 200.8	0.11	0.14	0.5
21.	Nickel (Ni)	mg/L	EPA method 200.8	0.0117	0.010	-
22.	Manganese (Mn)	mg/L	EPA method 200.8	<0.0015	<0.0015	0.5
23.	Chromium VI	mg/L	TCVN 7939:2008	<0.006	<0.006	0.05
24.	Chromium (Cr)	mg/L	EPA method 200.8	0.026	0.023	0.5
25.	Copper (Cu)	mg/L	EPA method 200.8	<0.003	<0.003	1
26.	Zinc (Zn)	mg/L	EPA method 200.8	0.009	0.011	2

No.	Parameters	Unit	Analytical methods	Results		QCVN 10-MT: 2015/BTNMT
				SW1	SW2	
27.	Surfactant	mg/L	SMEWW 5540 B&C:2017	<0.02	<0.02	-
28.	Phenol	mg/L	SMEWW 5530 B&C:2017	<0.001	<0.001	0.03
29.	E. Coli	MPN/ 100mL	TCVN 6187-2:1996	26	14	-

Note:

- The result is valid only for samples at the monitoring time. Symbol (-): unstipulated;
- The samples will be destroyed after 5 days from the date of issue of environmental monitoring results unless otherwise agreed with the customer
- QCVN 10:2023/BTNMT - National technical regulation on coastal water quality. Luong Gac. we apply limit value of polluted parameters in coastal.

- Sampling positions:

SW1: Thac Thay river, about 100 m from discharge point to upstream

SW2: Thac Thay river, about 100m from discharge point to downstream

Coordinates

21°06'43.0"N 107°21'06.7"E

21°06'35.4"N 107°21'08.7"E

Ha Noi, December 20th, 2023

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Sampling Site : Ash pond 2 - Mong Duong 2 BOT Coal Fired Power Plant
Address : Cong Hoa commune – Cam Pha city – Quang Ninh province
Sampling Date : 11/12/2023
Type of Samples : Noise
Number of Samples : 01 sample

No.	Sampling positions	Measurement methods	Results			
			6h-21h		21h-6h	
			Leq (dBA)	Lmax (dBA)	Leq (dBA)	Lmax (dBA)
1.	AP2-N	TCVN 7878-2:2010	56	65	48	55
QCVN 26:2010/BTNMT			70	-	55	-

Notes:

- The result is valid only for samples at the monitoring time. Symbol (-): unstipulated;
- **QCVN 26:2010/BTNMT** – National Technical Regulation on noise
- Sampling positions

Coordinates

AP2-N: Wastewater treatment system

21° 6'43.23"N

107°21'15.47"E

Hanoi, December 20th, 2023

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